



INFORMATION SERVICE BULLETIN

Volume 40, Number 3
Page 1 of 4

TUBELESS TYPE VALVES FOR PASSENGER AND LIGHT TRUCK TIRES¹ *INCLUDING* TUBELESS SNAP-IN TIRE VALVE INSTALLATION PROCEDURE

This bulletin is not all-inclusive; it is intended to illustrate some examples of the wide variety of valves available on the market. Questions pertaining to specific products and applications should be addressed directly to the tire and/or valve manufacturer.

INTRODUCTION

Valves, both standard and high pressure, are manufactured in numerous sizes and shapes. It is important that the proper valve is utilized based on the vehicle application, wheel, tire inflation and wheel cover. If you are unable to determine the proper valve type, please contact the valve, tire, or wheel manufacturer for assistance.

It is critical to use the proper valve that matches the maximum inflation capabilities for the tire/wheel assembly (see Warning). DO NOT use a valve rated for a maximum of 65 psi (450 kPa) in a light truck tire/wheel assembly or special trailer "ST" that is rated for greater than 65 psi (450 kPa). A high-pressure valve must be used when the inflation pressure exceeds 65 psi (450 kPa). If the incorrect valve is applied, it may detach and result in sudden loss of inflation pressure (see Warning). In the case of performance applications above 130 mph (210 km/h), it is recommended to use a clamp-in valve instead of a snap-in valve.²

ALWAYS remove and replace used snap-in valves when replacing tires. NEVER REUSE SNAP-IN VALVES. Only valves that are compatible with the rim being serviced must be used. ALWAYS be sure the valve stem is covered with a sealing valve cap. This helps to prevent moisture, dirt, and other contaminants from entering the valve core as well as providing an additional seal. Any time a tire is demounted for any reason, including repairs, also inspect the valve stem for damage (cracks, tears, etc.) to determine if the valve stem should be replaced.

NOTE

Valve pressure ratings may vary by manufacturer. Always verify the maximum pressure rating with the valve manufacturer prior to the installation.

⚠ WARNING

The valve must match the maximum inflation capability for the tire/wheel assembly. Improper application of tire valves may result in loss of inflation pressure, which can result in an accident, personal injury or death.

In some instances, tire/wheel assemblies may be equipped with a tire pressure monitoring system (TPMS) sensor that is attached to or is part of the valve assembly. When new tires are installed, it is recommended to also replace all components that are included in the TPMS valve replacement kit (see Figure 4D). In addition, whenever the sensor is disassembled for any reason, install a new TPMS replacement kit. Always replace any damaged sensor along with a new TPMS valve replacement kit.

NOTE

If the TPMS valve is replaced by a conventional valve, the TPMS will not function.

Tubeless Type Snap-In Valves, Rounded Base

For 65 PSI maximum

Valves rated to 65 psi (450 kPa) or lower are usually constructed out of rubber and metal and exhibit a beveled or rounded bottom. These are manufactured in many lengths and configurations. The two tubeless valves exhibited in Figures 1A and 1B are examples of the most common valves used on the market. Vehicles with full-size wheel covers may require a longer valve stem similar to the photo example (valve 1B).

Tubeless Type Snap-In Valves, Square Base

For use up to 80 PSI and up to 100 PSI maximum

Examples of high pressure snap-in valves are shown in Figures 2A and 2B, where:

- Snap-in valves rated up to 80 psi (550 kPa) use the standard wheel type valve hole, see valve 2A;
- Snap-in valves rated up to 100 psi (690 kPa) for the larger valve hole, see valve 2B.

The high pressure snap-in valve is a molded rubber and metal combination with a square base contour—unlike the 65 psi (450 kPa) maximum valve, which has a rounded base contour. Both valves are installed using the same method by pulling through the valve hole. Metal valve extensions are NOT to be used with snap-in valves.

Tubeless Type Clamp-In Valves

For use up to 200 PSI maximum

Clamp-in types such as the valve example depicted in Figure 3 are rated up to 200 psi (1380 kPa). The construction of these valves is metal with rubber grommets utilized for sealing. Clamp-in valves are recommended for high performance applications.² Metal valve extensions, typically found on dual wheel applications, also require a clamp-in valve.

Clamp-in type valves are installed with a hex nut and rubber grommets that are separate from the valve. Recommended torque at installation is 25-45 inch pounds (3-5 Newton meters).

Figure 1A and 1B
Rated Max 65 psi



Figure 2A
Rated Max 80 psi
Figure 2B
Rated Max 100 psi



Figure 3
Rated Max 200 psi



All of the valves in Figures 1, 2 and 3 are commonly available for both standard wheel valve holes (0.453-in/11.51 mm) and larger wheel valve holes (0.625-in/15.88 mm).

Figure 4A
Comparing Standard Snap-In Valve to a TPMS Snap-In Valve with Sensor



Figure 4B
Comparison: Valve Cap and Valve Tip Close-Up
 Below, are the same photos comparing standard valves and TPMS valves with and without their valve caps. Note the larger, tapered shoulder on the sensor valve of the TPMS.



Figure 4C
Clamp-in TPMS Valve



Figure 4D
TPMS Replacement Kit with Valve Assembly



TUBELESS SNAP-IN TIRE VALVE INSTALLATION PROCEDURE

Figure 5



STEP 1

Remove any rust and burrs from around the valve hole.

STEP 2

Look at Figure 5. DO lubricate standard snap-in valves (see valve 5A) with a rubber lubricant approved by the tire manufacturer. DO NOT lubricate high pressure snap-in valves (see valve 5B).

STEP 3

Use an appropriate installation tool to install the snap-in valve into the rim hole until the indicator ring (as noted in Figure 5) clears the weather side of the rim. Figures 6A and 6B shows both a metal and a composite installation tool.

Figure 6A - Metal Tool

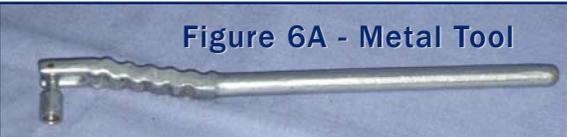
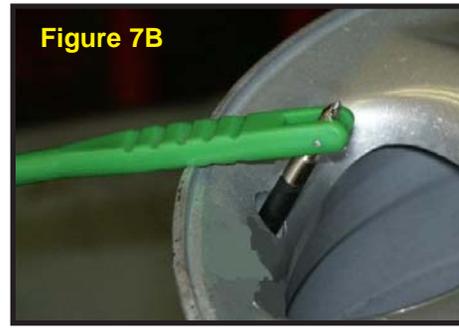


Figure 6B - Composite Tool



Figures 7A and 7B show a tire service professional properly installing the snap-in valve using the composite tool on an alloy wheel.



STEP 4

Inspect valve for tearing or other damage that may have occurred during installation.

STEP 5

If the valve was damaged during installation, remove it and replace it with a new valve. Damage is an indication that the rim hole needs deburring. Then return to Step 1.

ENDNOTES

¹ As defined by 49 CFR Part 571.139, Federal Motor Vehicle Safety Standard (FMVSS 139), light vehicles are motor vehicles with a gross vehicle weight rating (GVWR) of 10,000 lbs. or less. Tire sizes for light vehicles include all passenger car tires and light truck tires (through Load Range E).

² In the case of applications above 130 mph (210 km/h) it is recommended to use a clamp-in valve instead of a snap-in valve. SOURCE: The Tire and Rim Association.

REFERENCES

The Tire and Rim Association • Copley, Ohio
Phone (330) 666-8121 • Fax (330) 666-8340 • www.us-tra.org

The Tire and Rim Association is an organization whose purposes include the establishment and promulgation of interchangeability standards for tires, rims and allied parts for the guidance of manufacturers of such products, designers and manufacturers of motor vehicles, aircraft and other wheeled vehicles and equipment, and governmental and other regulatory bodies. Contact the TRA for more information about their "Year Book" and other publications.

Tire Industry Association • Bowie, Maryland

Phone (800) 876-8372 or (301) 430-7280 • Fax (301) 430-7283 • www.tireindustry.org

TIA is an international association representing all segments of the tire industry, including those that sell, service, manufacture, repair, recycle, or use new or retreaded tires, and also those suppliers or individuals who furnish equipment, material or services to the industry.

This Bulletin Replaces Volume 40, Number 2

This is a publication of the Rubber Manufacturers Association.

All rights reserved. The contents of this publication may not be reprinted or otherwise reproduced in any form without the express written permission of RMA.

To order RMA publications, call (202) 682-4800 or go online www.rma.org and click on Publications.